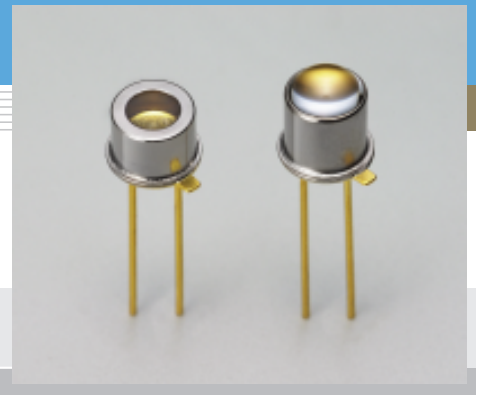


Infrared LED

L7850 series

Peak emission wavelength: 1.45 μm



L7850 series is a long wavelength LED using an InGaAs chip. Peak emission occurs at 1.45 μm , making L7850 series ideal for detection of water content or moisture. L7850-01 has a glass lens window for narrow directivity (beam spread).

Features

- Peak emission wavelength: 1.45 μm
- High radiant output power
- Narrow directivity (L7850-01)

Applications

- Light source for moisture meter
- Light source for photosensitive material

■ Absolute maximum ratings (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V _R		1	V
Forward current	I _F		80	mA
Forward current derating rate	-	T _a > 25 °C	1.1	mA/°C
Pulse forward current	I _{FP}	Pulse width=10 μs Duty ratio=1 %	1.0	A
Pulse forward current derating rate	-	T _a > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	T _{opr}		-30 to +85	°C
Storage temperature	T _{stg}		-40 to +100 *1	°C

*1: L7850 series is guaranteed to resist temperature cycle test of up to 5 cycles.

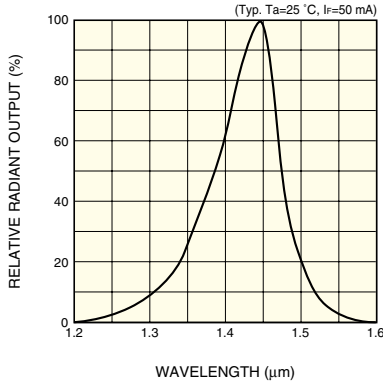
■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	L7850/-01			Unit
			Min.	Typ.	Max.	
Peak emission wavelength	λ_p	I _F =50 mA	1.4	1.45	1.5	μm
Spectral half width (FWHM)	$\Delta\lambda$	I _F =50 mA	-	100	150	nm
Radiant flux	ϕ_e	I _F =50 mA	0.7	1.0	-	mW
Forward voltage	V _F	I _F =50 mA	-	1.0	1.5	V
Pulse forward voltage	V _{FP}	I _F =1 A	-	2	3	V
Reverse current	I _R	V _R =1 V	-	-	10	μA
Cut-off frequency *2	f _c	I _F =50 mA \pm 10 mAp-p	1	3	-	MHz

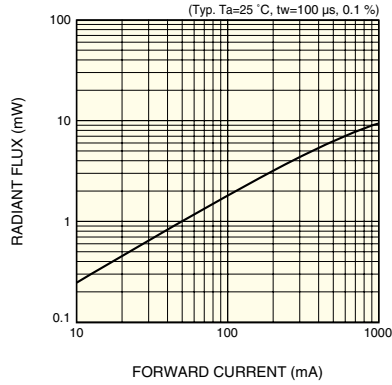
*2: Frequency at which the light output drops by -3 dB based on light output at 100 kHz.

L7850 series may be damaged or performance may deteriorate due to static electricity, so use caution when handling.

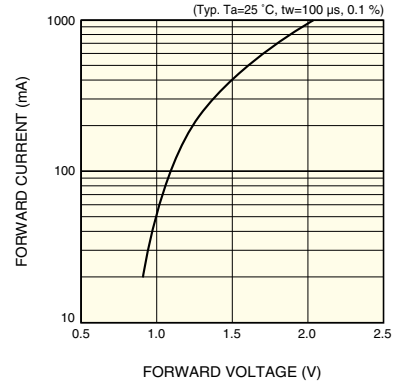
■ Emission spectrum



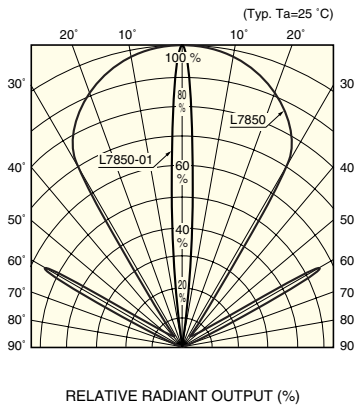
■ Radiant flux vs. forward current



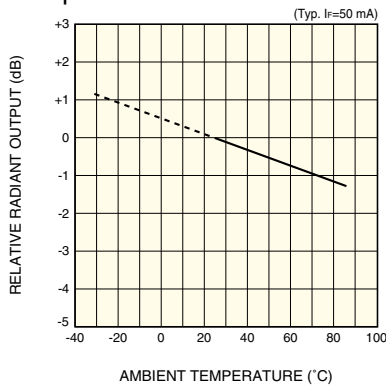
■ Forward current vs. forward voltage



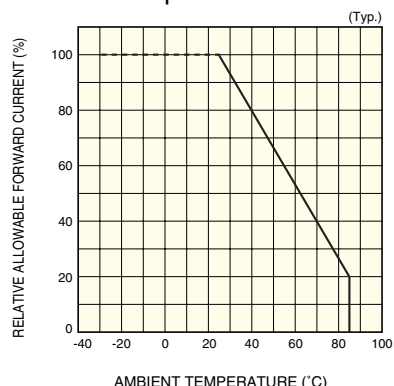
■ Directivity



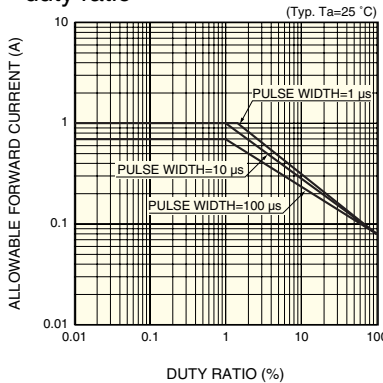
■ Radiant output vs. ambient temperature



■ Allowable forward current vs. ambient temperature



■ Allowable forward current vs. duty ratio



■ Dimensional outlines (unit: mm)

